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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,088	12/02/2003	Reed J. Blau	2507-6010US(22031-US-03)	6016

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EXAMINER	
HWU, DAVIS D	
ART UNIT	**PAPER NUMBER**
3752	

NOTIFICATION DATE	DELIVERY MODE
04/20/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USPTOMail@traskbritt.com

Office Action Summary	Application No.	Applicant(s)	
	10/727,088	BLAU ET AL.	
	Examiner	Art Unit	
	Davis Hwu	3752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 March 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,7-16,18-67,69-90 and 94-119* is/are pending in the application.

4a) Of the above claim(s) *29,30,66 and 67* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7-16,18-28,31-64,69-90 and 94-119* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *1/28/09*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Response to Amendment

1. Applicant's amendment and arguments of March 2, 2009 have been entered.

2. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

4. Claims 1-5, 7-14, 18, 22-25, 57-65, 69, and 72-75, 77, 78, 96-106, and 115-119 are rejected under 35 U.S.C. 103(a) as being unpatentable over Galbraith (US Patent 5,449,041) in view of Yoshikawa et al.

Galbraith discloses a fire suppression system comprising a chamber 12 and at least one gas generant 14 housed therein, the gas generant formulated to pyrotechnically produce an inert gas mixture comprising carbon dioxide in a concentration equal to the concentration pyrotechnically produced by the at least one gas generant. The system also comprises an igniter 32 and a heat management system 38 as recited in claims 2 and 3 and at least one solid as recited in claim 4 (Column 4, line 66). Galbraith also discloses the propellent generating nitrogen gas and a slag. Yoshikawa et al. teach a gas generating composition comprising a non-azide, non-azole (eg. carbohydrazide which is a non-azole) composition which produces no sodium chloride and since Yoshikawa et al. do not disclose producing carbon dioxide, it is obvious that any amount of carbon dioxide produced would be negligible if any is produced at all. It would have been obvious to one having ordinary skill in the art at the time the invention was made

to have modified the device of Galbraith et al. by using a non-azide, non-azole composition to produce an inert gas mixture as has been taught by Yoshikawa et al. to produce a safe gas mixture. Making the concentration less than or equal to the Immediately Harmful to Life or Health concentration would have been an obvious safety and health requirement. The device will carry out the methods of claims 57-61. The limitations of claims 22, 62, and 72 would have been matters of design choice depending on the systems requirements for a particular application. It is well known that fires are extinguished by reducing an oxygen content in a space. The amount of CO2 as recited in claim 115 would have been a matter of design choice. The amounts of carbon dioxide produced as recited in claims 96, 97, 118 and 119 would have been matters of design choice. Regarding claims 97-100, the prior art does recite significant amounts of carbon monoxide, nitric oxide, nitrogen dioxide, or ammonia being produced.

5. Claims 15, 70, 79, 80, 94, and 95 are rejected under 35 U.S.C. 103(a) as being unpatentable over Galbraith in view of Yoshikawa et al. and further in view of Taylor et al. and Moore et al.

Taylor et al. teaches a gas generant comprising cupric oxide and titanium dioxide and Moore et al. teaches a gas generant comprising hexa(ammine)cobalt-nitrate. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have made the gas generant of Galbraith and Yoshikawa et al. comprising a combination of the elements as taught by Taylor et al. and Moore et al. since Taylor et

al. and Moore et al. teach such elements for forming a gas generant are know in the art and the combination of these elements would properly form a gas generant.

6. Claims 16, 71, and 81-90 are rejected under 35 U.S.C. 103(a) as being unpatentable over Galbraith in view of Yoshikawa et al. and in further view of Taylor et al. and Hinshaw et al.

Taylor et al. teaches a gas generant comprising cupric oxide and titanium dioxide and Hinshaw et al. teaches a gas generant comprising hexa(ammine)cobalt-nitrate and polyacrylamide. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have made the gas generant of Galbraith and Yoshikawa et al. comprising a combination of the elements as taught by Taylor et al. and Hinshaw et al. since Taylor et al. and Hinshaw et al. teach such elements for forming a gas generant are know in the art and the combination of these elements would properly form a gas generant. The components would re-crystallize upon cooling

7. Claims 19-21 and 76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Galbraith in view of Yoshikawa et al. and further in view of Knowlton et al. Knowlton et al. teaches a gas generant comprising a phase change material including lithium nitrate, sodium nitrate, and potassium nitrate. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have included into the gas generant of Galbraith and Yoshikawa et al.

A phase change material comprising the various nitrates as recited in order to manage the heat as taught by Knowlton et al.

8. Claims 26-28, 31-45, 48, 49, and 53-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Galbraith in view of Yoshikawa et al. and in further view of Drakin.

Drakin discloses the heat management comprising an effluent train. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Galbraith and Yoshikawa et al. to use an effluent train in the heat management system since such arrangements have already been taught by Drakin. The gas generant being configured into at least one pellet would have been an obvious matter of design choice since such a modification would involved a mere change in the shape of an object which is generally recognized as being within the level or ordinary skill in the art. Regarding claim 37, the percentage as recited would have been a matter of design choice in producing a safe concentration of the substances. The limitations of claim 53 would have been matters of design choice depending on the systems requirements for a particular application. It is well known that fires are extinguished by reducing an oxygen content in a space.

9. Claim 46 is rejected under 35 U.S.C. 103(a) as being unpatentable over Galbraith in view Yoshikawa et al. and Drakin and in further view of Taylor et al. and Moore et al.

Taylor et al. teaches a gas generant comprising cupric oxide and titanium dioxide and Moore et al. teaches a gas generant comprising hexa(ammine)cobalt-nitrate. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have made the gas generant of Galbraith, Yoshikawa et al., and Drakin

comprising a combination of the elements as taught by Taylor et al. and Moore et al. since Taylor et al. and Moore et al. teach such elements for forming a gas generant are know in the art and the combination of these elements would properly form a gas generant.

10. Claim 47 is rejected under 35 U.S.C. 103(a) as being unpatentable over Galbraith in view of Yoshikawa et al. and Drakin and in further view of Taylor et al. and Hinshaw et al.

Taylor et al. teaches a gas generant comprising cupric oxide and titanium dioxide and Hinshaw et al. teaches a gas generant comprising hexa(ammine)cobalt-nitrate and polyacrylamide. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have made the gas generant of Galbraith, Yoshikawa et al., and Drakin comprising a combination of the elements as taught by Taylor et al. and Hinshaw et al. since Taylor et al. and Hinshaw et al. teach such elements for forming a gas generant are know in the art and the combination of these elements would properly form a gas generant.

11. Claims 50-52 and 76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Galbraith in view of Yoshikawa et al. and Drakin and further in view of Knowlton et al.

Knowlton et al. teaches a gas generant comprising a phase change material including lithium nitrate, sodium nitrate, and potassium nitrate. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have included into the gas generant of Galbraith, Yoshikawa et al., and Drakin a phase change material

comprising the various nitrates as recited in order to manage the heat as has been taught by Knowlton et al.

12. Claims 107-114 are rejected under 35 U.S.C. 103(a) as being unpatentable over Galbraith in view of Yoshikawa et al. and in further view of Hinshaw et al. Hinshaw et al. teaches a gas generant comprising hexa(ammine)cobalt-nitrate. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have made the gas generant of Galbraith and Yoshikawa et al. comprising a combination of the elements as taught by Taylor et al. and Hinshaw et al. since Taylor et al. and Hinshaw et al. teach such elements for forming a gas generant are know in the art and the combination of these elements would properly form a gas generant. The amount of CO2 produced and the components would have been matters of design choice.

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Davis Hwu whose telephone number is (571)272-4904. The examiner can normally be reached on Mon-Friday 8:00-4:30 If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Len Tran can be reached on (571)272-1184. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov.

/Davis Hwu/
Primary Examiner, Art Unit 3752